

esophagus (the food pipe) to the heart. The veins in the esophagus dilate (widen) and may rupture, causing slow or massive intestinal bleeding.

Diagnosis and Liver Biopsy

The physician can always suspect cirrhosis from the patient's medical history and physical examination. In addition, certain blood tests and scans or ultrasound (sonography) can provide helpful information. To make a definite diagnosis, however, a liver biopsy (tissue sample) is required. This is performed by anesthetizing the skin of the right-lower chest and inserting a thin, long needle into the liver. A core or specimen of tissue is removed and examined under a microscope.

What Is the Course of Cirrhosis?

When cirrhosis is diagnosed, the patient and physician begin a plan of action designed to preserve the remaining liver cells and correct the complications mentioned above. By following this plan, most patients can lead long, productive lives.

Prevention

Over 90 percent of cirrhosis is caused by excessive alcohol consumption or hepatitis viruses. Of course, alcohol can be avoided. Alcohol consumption should always be limited to no more than 1 or 2 drinks per day. And Type B hepatitis now has an effective vaccine against it. Vaccination against B hepatitis virus is safe and inexpensive. It should be taken especially by certain high-risk groups: all health care professionals; persons traveling to Third World countries; homosexuals; intravenous drug users; and prostitutes.

Treatment

Often, the only required treatment for cirrhosis is removing the offending cause:

- The alcoholic patient must permanently stop consuming alcohol.

- When iron is being retained in the body, chronic removal of blood by vein eliminates large amounts of iron.
- Cortisone medicine helps treat autoimmune hepatitis and cirrhosis.
- Restricting salt and using fluid pills (diuretics) reduce edema and abdominal swelling.
- Toxins and injurious drugs must be avoided.
- Decreasing dietary protein and using certain laxatives generally can prevent changes in mental function.
- Bleeding veins in the esophagus can be injected with sclerosing (clotting) agents or tied off with rubber bands. Occasionally, surgery is necessary to prevent recurrent massive bleeding.
- Ursodiol (Actigall) and other drugs have been helpful in treating primary biliary cirrhosis and primary sclerosing cholangitis.

Liver Transplant

Liver transplantation has progressed to the stage where it can now be considered as standard treatment for selected patients.

In Summary

Cirrhosis of the liver is a common disorder that has many causes. With early diagnosis, much can be done to prevent serious complications. Various treatments are available, depending on the cause of the liver injury and its complications. Ongoing medical research promises major advances in treating cirrhosis in the future.

SPECIAL INSTRUCTIONS:

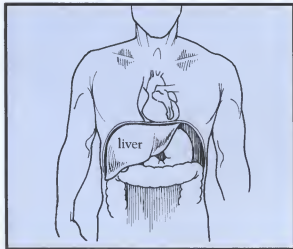
This material does not cover all information and is not intended as a substitute for professional medical care.

Cirrhosis

The liver is a large organ that sits in the right upper-abdomen, just under the right lung. It is one of the body's most "intelligent" organs in that it performs so many different functions at the same time. The liver makes proteins, eliminates waste material from the body, produces cholesterol, stores and releases glucose energy and metabolizes many drugs used in medicine. It also produces bile that flows through bile ducts into the intestine where it helps to digest food. This remarkable organ also has the ability to reproduce itself if it is injured or partially removed. The liver receives blood from two different sources—the heart and the intestine. All of this blood flows through the liver and returns to the heart. It is no wonder that the ancient Chinese viewed the liver, not the heart, as the center of the body.

What Is Cirrhosis?

Any chronic injury in the liver can result in scar tissue. This scarring distorts the normal structure and regrowth of liver cells. The flow of blood through the liver from the intestine is blocked and the functions of the liver, such as processing drugs or producing proteins, are reduced.



What Causes Cirrhosis?

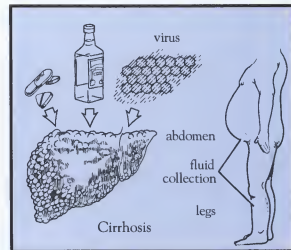
Cirrhosis can be caused by many agents, some known and others unknown:

- **Alcohol**—Alcoholism is the most common cause of cirrhosis in the United States.
- **Chronic Viral Hepatitis**—Type B and Type C hepatitis, and perhaps other viruses, can infect and damage the liver over a prolonged time and eventually cause cirrhosis.
- **Chronic Bile Duct Blockage**—This condition can occur at birth (biliary atresia) or develop later in life (primary biliary cirrhosis). The cause of the latter remains unknown. When the bile ducts outside the liver become narrowed and blocked, the condition is called primary sclerosing cholangitis. This condition is often associated with chronic ulceration of the colon (colitis).
- **Abnormal Storage of Copper (Wilson's Disease) or Iron (Hemochromatosis)**—These metals are present in all body cells. When abnormal amounts of them accumulate in the liver, scarring and cirrhosis develop.
- **Drugs and Toxins**—Prolonged exposure to certain chemicals or drugs can scar the liver.
- **Autoimmune Hepatitis**—This chronic inflammation occurs when the body's protective antibodies fail to recognize the liver as its own tissue. The antibodies injure the liver cells as though they were a foreign protein or bacteria.
- **Cystic Fibrosis and Alpha 1-antitrypsin Deficiency**—These disorders are inherited.

What Are the Signs and Symptoms?

Cirrhosis takes years to develop. During this time, there are usually no symptoms, although mild fatigue, weakness and decreased appetite may occur. When cirrhosis is fully developed, a number of signs may be present:

- **Fluid Retention in the Legs and Abdomen**—The liver produces a protein, called albumin, that holds fluid in blood vessels. When the



blood level of albumin falls, fluid seeps out of the tissues into the legs and abdomen, causing edema (fluid accumulation) and swelling.

- **Jaundice**—The liver produces bile that normally flows into the intestine. However, bile can back up into the blood, causing the skin and eyes to turn yellow and the urine to darken.
- **Intense Itching**—Certain types of cirrhosis, such as chronic bile duct blockage, can produce serious itching.
- **Gallstones**—Cirrhosis causes the abnormal metabolism of bile pigment. Because of this, gallstones develop twice as often in cirrhosis patients as in those without the disorder.
- **Coagulation Defects**—The liver makes certain proteins that help clot blood. When these proteins are deficient, excessive or prolonged bleeding happens.
- **Mental Function Change**—The liver processes toxins from the intestine. When these substances escape into the bloodstream, as occurs in severe cases of cirrhosis, a variety of changes in mental function can develop.
- **Esophageal Vein Bleeding**—In advanced cirrhosis, intestinal blood bypasses the liver and flows up and around the